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NEWSLETTER

of the

Hawaiian Botanical Society

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NOTICES

Hawaiian Botanical Society Meeting.

DATE: Monday, 2 October 1972 at 7:30 P. M.
SPEAKER: Fred Erskine,
Chairman, Board of Agriculture.
PLACE: Agee Hall, HSPA
TOPIC: The future of Agriculture in Hawaii.

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Oops !!

Corrections in June, 1972 issue:
Page 25, column 1, Article I, Membership, Section 3, line 11, after "shall", insert, "be at any regular meeting and shall require a two-thirds vote by ballot of the members present. Persons elected to Honorary Membership shall ..." Thus, the two corrected sentences should read, "Election of a candidate for Honorary Membership shall be at any regular meeting and shall require a two-thirds vote by ballot of the members present. Persons elected to Honorary Membership shall be so notified in writing by the Secretary of the Society."

Page 30, Society Business, May 1, 1972, item 3, line 2, change "Arboretum" to "Arbor Day."

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PRINCIPAL PAPERS

THE CRITICAL NEED FOR CONSERVATION IN THE MARQUESAS ISLANDS

George W. Gillett
Professor of Botany, University of California, Riverside

My research in the Marquesas Islands was limited to botanical field work on the islands of Nukuhiva, Uahuka, and Uapou. This work commenced on 28 June and extended through 23 August, 1970. During this period, several field trips were made to the interior of Nukuhiva on both the rain forest and arid sides of the summit ridge. In this work I climbed the summit ridge 4 times, collecting many species of raim forest plants and making observations on the native vegetation. During the visitation to Uahuka a field trip was made in upper Hané Valley where I ascended to

SHOUT
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IT

approximately 800 meters and made similar notations. The visitation to Uapou was restricted to observations at close range of the southern slopes of that island. While the latter visit was unsatisfactory from a botanical viewpoint, it did afford a reliable examination of the general character of the vegetation and the effects of grazing animals upon it.

I am indebted to several government officials of French Polynesia for helpful assistance and cooperation in this work. These men include Dr. Henri Lavondés and his staff at ORSTOM, M. Marc Darnois, Secretary to the Governor, Mr. Robert Millaud, Service de l'Economie Rurale, M. Bergeron, Administrator for the Marquesas Islands, and M. Francois Ollier, special assistant to M. Bergeron. My deepest appreciation is extended to these men whose kindness made the research possible.

Nukuhiva

The upland rain forest has been largely destroyed on this island and is now restricted, essentially, to the crest of the summit ridge, an area of about 4 square miles and less than 3% of the total area (186 sq. miles) of the island, the largest of the Marquesas group. It is emphasized that this delineation is limited to virgin rain forest vegetation. Where the rain forest has been destroyed it has been replaced by exotic weed species of little scientific or economic value.

The indigenous dry land vegetation on the arid west slopes of the summit ridge has been so severely grazed and trampled that it is represented only as scattered plants of a few durable or unpalatable species. This vegetation has been over 90% destroyed, largely by goats. Serious erosion has developed in the area.

The most serious destructive element on the landscape of Nukuhiva has been and is the feral goat whose depredations have continued almost unchecked for over 150 years. Considering the territory the wild goat has already covered, it is predicted that the residual indigenous vegetation will be completely destroyed within the next 50 years. The wild cattle, although of a more recent introduction, are of nearly equal status as a degrading element. Since wild cattle predominate on the lower, more gentle slopes (as contrasted to the propensity of goats to ascend and denude the very steep, higher slopes), they have destroyed nearly all of the native vegetation on such terrain. I have followed the tracks and depredations of the wild cattle to elevations of 1,100 meters, less than 100 meters from the crest of the summit ridge of Nukuhiva. Wild cattle eat their way into the heart of the virgin rain forest, isolating large segments of native vegetation which then are successively eliminated as in a military operation. Wild cattle and goats provide transport and avenues of invasion for pernicious exotic weeds which then dominate and succeed the native plants.

The flora of Nukuhiva includes many plants known only from the Marquesas Islands, some known only from Nukuhiva. Some of these species could not be found after persistent searching, these including Apetahia longistigmata (F. Brown) Wimmer (Companulaceae), Pipturis incanus (Blume) Weddell v. nukuhivensis F. Brown (Urticaceae), Cyrtandra toviana F. Brown (Gesneriaceae), and others. However, some of the unusual endemic species were located, thise including Cyrtandroidea jonesii F. Brown (Gesneriaceae, Pelagodoxa henryana Beccari (Arecaceae). The rare Pelagodoxa, a palm known only to the Taipi Valley on Nukuhiva, now occurs on only about 1 acre of land, and thetotal population amounts to only 30 plants, of which only 3 are of seed-bearing age. The endangered plants are concentrated in the uplands of Nukuhiva rather than at the lower elevations. Clearly, the time is at hand for the initiation of serious, meaningful action to preserve the residual upland native vegetation of this island.

Uahuka

My visit to Uahuka was limited to the south coast and the valleys of Vaipaee and

Hané. In Vaipaee, the wild goats are so numerous and their depredations so extensive that there was no point in making botanical collections in the area. Hané Valley, on the other hand, is relatively free of goats and cattle for some unexplained reason. The rain forest on the upper reaches of Hané Valley is correspondingly virgin in character, although this vegetation is relatively poor in number of species as compared to the rain forest of Nukuhiva.

Uapou

Native vegetation of the Southeast slopes of Uapou has been almost completely destroyed by grazing animals. The altered vegetation provides only a sparse cover for the landscape. From my rather brief examination I would assert that Uapou has been very severely damaged and that native plant species are restricted to the inaccessible volcanic spires of the island.

Recommendations

As a preface to my recommendations I would like to point out that the evolutionary forces which brought forth the plant life of Polynesia did not include grazing animals. Consequently, these plant species never evolved defensive adaptations against the trampling and foraging of ungulates. The result is that where these animals have been introduced in Polynesia they have gained immediate dominance and destruction; thus,the native vegetation is depleted and shrinks to extinction. In this process, critical, irreplaceable scientific resources are lost forever. These resources may well include presently unknown medicinal or other economic plants of great importance. My recommendations include the following:

1. The complete removal of wild goats from the Marquesas Islands by whatever measures are appropriate and feasible and the completion of the operation within not more than 10 years;

2. A drastic reduction of wild cattle from the uplands of Nukuhiva, possibly the total removal of wild cattle. If an introduction is to be made of improved blood lines of cattle, removal of the feral cattle would seem mandatory to preserve the integrity of the superior genetic lines. Removal of cattle from the Toovii plateau of Nukuhiva is strongly recommended in the interest of preserving the adjacent residual rain forest vegetation. The cattle of the arid side of the summit function only to destroy vegetation. They are isolated from the villages and scarcely contribute to the food supply and thus, their removal is logical from that point of view;

3. The concentration of any managed cattle on the uplands between the Taipi and Taiohae Valleys (not Toovii) and the introduction of high protein legumes and grasses to effect adequate nutrition for the improved herds; and,

4. Declaration of Natural Area Preserve status for the summit ridge and the natural habitat on Pelagodoxa on Nukuhiva. The native habitat of Pelagodoxa (called "enu" by the Marquesans) is well known to the residents of the Taipi Valley and could be readily located and delimited by them.

At this time I am reluctant to make any recommendations about a reforestation project for Nukuhiva. Such a project requires a testing of various tree species for adaptability and effective erosion control qualities. This is both time consuming and expensive. It is my opinion that the trees, shrubs and herbs of the present vegetation will heal the scars of soil erosion once the goats and cattle are removed. In any event, a reforestation project initiated without the removal of wild goats and cattle is doomed to failure.

Perhaps the most important objective we all face is the goal of teaching the people of the Marquesas Islands the unique status and irreplaceable character of their

native biota. Preservation and conservation can be accomplished only by the people, not by proclamation or edict. All countries of the world, including the United States and particularly Hawaii, face this problem. It is most critical on the oceanic islands of the world and especially on those of Polynesia.

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SOME OBSERVATIONS FROM WEST MOLOKAI

Noah K. Pekelo Jr.

Enforcement Officer, Division of Fish and Game
Department of Land and Natural Resources

I - Native trees of Maunaloa

During the summer of 1950, I made my first survey of the native trees growing on Moanaloa. Since then I have made six surveys on the mountain. The surveys began as a result of my hope of finding some remaining members of two species now considered extinct on Molokai--Hibiscus brackenridgei v. molokiana and Kokia cookei. I have yet to find a trace of these plants (there are many areas I have not searched) but I have located and mapped the following native trees in the area:

1.	Gardenia brighami	Nau	2.	Canthium odorata	Alahe`e
3.	Nesoluma polynesicum	Keahi	4.	Hibiscus tiliaceus	Hau
5.	Aleurites moluccana	Kukui	6.	Erythrina sandwicense	Wiliwili

With the exception of the wiliwili, the trees are all found at elevations above 700 feet. These trees are remnants of an old native forest; for the most part they form patches of several plants to single trees. Most of them are found in gulch beds or along the walls of steep ridges growing in a relatively wide area.

Throughout the twenty years that I have observed these trees, Molokai Ranch has scrutinized my observations on these remnant plants. The reason for their critical observations on my information is the concern for the well-being of these trees. The wiliwili and the hau are the only trees that have reproduced; the other species have remained static but healthy. In 1963, I found one decadent tetraplasandra tree growing along the steep wall of Waikane gulch; this plant has since died. The nau is the other tree which will become extinct on West Molokai. In 1963, there were seven live plants in a group; today only four remain. They will be the victims of erosion caused by the construction of the Maunaloa highway in the late 1940's. I have found that the lack of environmental planning in highway engineering has played havoc on many natural and historical features on Molokai.

II - Notes on other native plants

Over two decades ago, if I had looked at the habitats of some of the interesting native plants found on West Molokai in the light of our present ecological thinking, I would have been shocked into assuming that here were plant communities clinging tenaciously for existence! Time, the regulator of our ecological processes has clearly shown how far from fact this would have been. These plant communities growing in specific niches, such as the Maomomi sand dunes, Hio Point, the beaches, Laau Point, the basalt boulders, the flat lands and ridges of Maunaloa, are a vibrant and viable part of our ecosystem contrary to the assumption that these plants are remnants of a decadent community on the doorstep of extinction!

An excellent example of my point is the Department of Hawaiian Homes pasture land at Maomomi. The area is grazed continuously throughout the year and is a classic example of overgrazing, yet within this area exists an extensive stand of typical native strand plants. During the dry season, these appear to be dying; the last vestiges of a strand community. However, when seasonal rains arrive, the plants

burst forth into vigorous growth and complete their annual cycles of life; the cycles which all of the plants in such niches go through.

Much has been said and written about the imminent extinction which these native plants face. Entirely too much emphasis is put on what could happen relative to what has happened. We are prone to view what has happened from the standpoint of assumption rather than scientific fact. What is needed above all else today is systematic, scientific study of the interrelationships of the plants and animals and their environments on West Molokai.

Over the years I have kept nature notes on many native plants and animals of Molokai. I list here some of the plants I have observed for many years; plants which I feel are in no danger of extinction; plants which are vigorous and viable!

Cyperaceae	Cyperus spp.	(sedge)
Gramineae	Eragrostis variabilis	Kawelu
	Panicum torridum	Kakonakona
	Panicum (fourili ?)	Au kakonakona (?) 1/
	Panicum xerophylum	(?)
Polypodiaceae	Dryopteris decipiens (?)	Iwa iwa (?)
Nyctaginaceae	Boerhavia diffusa	Alena
	Boerhavia tetranda	"
Aizoaceae	Sesuvium portulacastrum	Akulekule
Portulacaceae	Portulaca spp.	
Cruciferae	Lepidium spp.	Anaunau
Capparidaceae	Capparis sandwichiana	Pua-pilo
Leguminosae	Tephrosia purpurea	Auhuhu
	Sesbania tomentosa	Ohai
Verbenaceae	Vitex simplicifolia	Pohinahina
Solanaceae	Lycium sandwicense	Ohelo-kai
Goodeniaceae	Scaevola sericea	Naupaka-kahakai
Compositae	Gnaphalium sandwicensium	Ena ena
	Lipochaeta spp.	Nehe
Euphorbiaceae	Euphorbia spp.	Akoko
Malvaceae	Sida fallax	Ilima
	Sida cordifolia	Lei-ilima
	Gossypium tomentosum	Mao
Convolvulaceae	Ipomoea pes-caprae	Pohuehue
	" (?)	Hunakai
	" pentaphylla	(?)
	" (?)	Koali-ai
	Jaquemontia sandwicensis	Pa`u-o-hi`iaka
	Cuscuta sandwichiana	Pololo
Boraginaceae	Heliotropium curassavicum	Kipukai
	" " anomalum v. argenteum	Hinahina
Piperaceae	Peperomia spp.	`Ala`ala wai nui kane
Plumbaginaceae	Plumbago zelanica	Ilie`e

1/ Question marks (?) signify that editor either could not confirm word in Neal's "In gardens of Hawaii" or was uncertain of transcription.

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A noteworthy quotation

"A monorail through the Iao Valley (Maui) would display the world's most indigenous Hawaiian habitat." Pacific Business News, March 30, 1970.

PUBLICATIONS

NOTICE

Part of Book 7, Flora Hawaiiensis now available

In reply to an inquiry, Drs. Otto and Isa Degener, Waialua, Oahu, Hawii 96791, have replied that 170 pages of unbound, illustrated descriptions, Book 7, Flora Hawaiiensis may be purchased directly from the authors for $5.00. On completion of Book 7 with many more pages and a binding, it will be sold for a higher price. Books 1-4, ed.2(a unit containing 1192 pages), Book 5 (438 pages), and Book 6 (530 pages), may be purchased from the authors for $10.00 each. Dr. Otto Degener's "Naturalist's South Pacific Expedition:: Fiji," 312 pages, 166 photos, is also available from the author for $5.00. All of these except the pages of Book 7 are available in book stores, but prices at these sources at these sources are not known.

REVIEWS

Plants of Samoa, a guide to their local and scientific names with authorities; with notes on their uses, domestic, traditional and economic. 1972
B. E. V. Parham. New Zealand Department of Scientific and Industrial Research, Information Series No. 85, 162 pages, maps, Wellington, N. Z. NZ$ 4.50.

Mr. Parham was Director of Agriculture, Forestry and Fisheries in Samoa from 1956 to 1964 and is one of a series of members of a family skilled in the knowledge of central Pacific botany. His son, J. W. Parham, is the author of Plants of the Islands.

An alphabetical series of Samoan vernacular names leads the reader to the scientific name and data concerning the plant, including a short description and its usefulness to man. Fifty years ago, almost every Samoan one met, even the children, could give you the Samoan name for a majority of the plants you showed them. Even today one can learn such names by diligent inquiry. This little book is the key by which such names can be translated into useful information. Conversely, an alphabetical index can convert the scientific name into the native name and produce the information which Mr. Parham has recorded. The material is carefully documented to some fifteen botanical authorities whose names he has carefully correlated. Bishop Museum Book Shop is ordering copies for local sale.

E. H. Bryan, Jr.

Hawaiian names of vascular plants. 1972
John R. Porter. U. of Hawaii, College of Tropical Agriculture, Agric. Expt. Sta., Department Paper No. 1, 64 pages illus.

I predict that this pamphlet will become a standard reference for everyone who is interested in the vascular plants of Hawaii, amateur as well as professional. The author, Dr. Porter, who compiled this work while a graduate student, has condensed the Hawaiian names and their translations or meanings, the latin epithets and the origins of the species into a compact, well organized handbook. Today, individuals who can supply the Hawaiian names of plants from first hand knowledge are rapidly disappearing. Thus, this book will help to preserve a valuable bit of Hawaiiana. The booklet contains many graphic line drawings of representative Hawaiian plants which were prepared by Ronald W. Walker.

Russell K. LeBarron

Red Data Book, Volume 5. Angiospermae. 1970

Compiled by Ronald Melville. International Union for Conservation of Nature and Natural Resources. Survival Service Commission. 1110 Morges, Switzerland.

The Survival Service Commission of IUCN has for some years been compiling data on

rare and endangered species of animals and plants and publishing this information in a series of Red Data Books. The first four volumes dealt with birds and mammals. Surveys of these groups have been completed on a world-wide basis. Volume 5 is the first of several proposed to deal with plants. Others should be appearing in the near future. The present volume is priced at $7.00. A looseleaf binder is optional at $3.00 extra.

Dr. Ronald Melville, who is compiling these data for flowering plants, estimates that perhaps 20,000 of the 250,000 species of angiosperms are endangered to a greater or lesser degree. Volume 5 treats 118 species so the job has just begun. It is issued in looseleaf format to allow for updating as more information becomes available. Although the cover page of Volume 5 is dated 1970, some of the pages are dated 1970 and some 1971.

Each species is treated on a single sheet and the following information is given if available: scientific name, vernacular name, family, description, type, references to illustrations, habitat, ecology, status, present distribution, former distribution, reasons for decline, protective measures both taken or needed and references. Most pages are printed on white paper but pink sheets are used to denote "giving cause for very grave anxiety" and green sheets to denote"plants formerly included but recovered to the extent that their survival is ensured".In the present volume, a 1971 revision sheet has reclassified Camelia crapnelliana Tutcher from "presumed extinct" to "endangered". Five categories are included: Presumed extinct, Endangered, Rare, Depleted, and Indeterminate. Sheets are being printed when reasonably complete rather than in any predetermined order. One half of the species treated in this volume are from islands; a reflection of the widely recognized relatively greater fragility of insular species.

Six endemic Hawaiian species are included in this volume. Hibiscadelphus bombycinus and H. wilderianus are listed as extinct; H. giffardianus and H. hualalaiensis as endangered; and Plantago princeps as rare; and the sixth species, Sophora chrysophylla, is said to have 3 forms still moderately abundant and 19 forms rare or depleted. Dr. Melville suggests that habitat modification and destruction by introherbivores seems to be the major reason for their decline; I concur. However, he further suggests that destruction by lava flows is a long term reason for decline in Hibiscadelphus bombycinus, H. giffardianaus and H. wilderianus. I cannot agree with this suggestion because these species presumably evolved in active volcanic areas and have probably been exposed to the threat of lava flows as long as they have been in existence.

As an appendix, Dr. Melville and C. Jeffrey have given an annotated list of the endemic flowering plants of the Seychelles, and indicated their status. Of 80 species listed, one is presumed extinct, 13 either extinct or endangered, 16 endangered, 16 rare, 25 depleted, 8 indeterminate, and one locally common. Thus, the flora of the Seychelles appears to be in even worse shape than the flora of Hawaii at this time.

Publication of the Red Data Book for Angiospermae is an immense undertaking and Dr. Melville is to be congratulated for starting the compilation. Such compilations are only the first step, but essential in the development of a sound plan for protecting rare and endangered species and assuring the survival of at least some of them.

C. H. Lamoureux

United Nations list of national parks and equivalent reserves. 2 ed. 1971
International Union for Conservation of Nature and Natural Reserves. International Commission on National Parks. Hayez (Publishers), rue Fin 4-B, 1081 Bruxelles, Belgium. 601 pages, illis., paper bound. English ed. $20.00.

In the preparation of this expanded and revised second edition, over-all direction and editorial responsibility was provided by Jean-Paul Harroy, Professor of the

Free University of Brussels; Chairman of IUCN's International Commission on National Parks.

As defined in this document, "National Parks" in addition to possessing certain minimum standards for security, legality and area, "......shall denote: areas established for the protection and preservation of superlative scenery, flora and fauna of national significance which the public may enjoy and from which it may benefit when placed under public control." Minimum size is 2,000 ha. in countries with population densities less than 50/km^2; 500 ha. if population density exceeds 50/km^2. However, the present document allowed a great many exceptions as to quality, size, and legal control, the primary purposes being to show what is protected, where, how and by whom.

The document has numerous objectives, perhaps the two more important being (a) to inform interested persons what is available, and (b) to show the weak spots, of which there are many on a global basis, in this phase of conservation and thus, to stimulate efforts to obtain the establishment of additional needed preserves. The United States of America ranks far ahead of other countries of similar size such as Australia, Prazil, Canada and the USSR in the number, diversity, and acreages of reserves listed in this report. The main unreported country is the Peoples Republic of China.

This is an important reference work for conservationists, travellers, and scientists in many fields.

Russell K. LeBarron

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EVENTS

"Trees are for people"

This will be the theme of the 14th Annual Hawaiian Forestry Conference which will be held at the Kauai Resort Hotel, October 5 and 6, 1972. Everyone is welcome. Topics for discussion:

The forestry program on Kauai
The New Pacific Tropical Botanical Garden
The Ever-increasing use of wood in Hawaii
New Federal funding programs for urban forestry
The "impact" that environmental impact statements generate
New research findings in forestry

Field trips: North Kauai, afternoon, October 5; South Kauai all day October 6. For further information about reservations and details, call Mrs. Williams, Chamber of Commerce of Hawaii, Honolulu. Ph. 533-7491.

The latest from Kahoolawe

District Forester Wong observed additional endemic Hawaiian plants while visiting Kahoolawe 31 July-2 August, 1972:

Maiapilo	Capparis sandwichiana DC.	Three large plants on cliff, Kaulana Bay.
Naupaka-kahakai	Scaevola sericea Vahl.	Near Lae o kuikui and Lae o ka ule.
Hinahina	Heliotropium anomalum H. and A. v. argenteum	Southwest tip of island. (Note: in the leis of the islands, hinahina represents Kahoolawe)
Possible sighting with binoculars		
Nehe	Lipocheata spp.	On a small off-shore rock, Puu Koae.

Maiapilo and Naupaka were last reported by Bryan in 1931; we have no information about previous recording of hinahina despite its being the island flower!

Harry Wheatcroft Lecture and Reception

Harry Wheatcroft, a recognized authority on roses, will present a notable lecture entitled "Ramblings of a rosegrower." His first lecture will be Wednesday, September 20, 7:30 p. m., in the HIC Pikake Room. Earlier the same day, he will appear at a dedication and reception at the Kapiolani Rose Garden, beginning at 10:30 a.m. Other scheduled lectures by Mr. Wheatcroft:

Sept. 21, 7:30 p.m., Maui Community College
Sept. 23, 10:30 a.m.,Lihue Library
Sept. 25, 7:30 p.m., Hilo Library

All of these events are open to the public and there is no admission charge.

The lecturer is renowned for his dynamic personality, his keen wit, outspoken views, and stylish appearance, in addition to his expertise in his field. During the last 50 years he has travelled widely to find new roses to grow in English gardens. One of his most famous imports, "Peace", has outsold every other rose variety in the world. With the help of his two sons, Wheatcroft now produces over 1.5 million different roses annually on his country estate in Nottingham. He is also Vice-President of the Royal National Rose Society.

Harry Wheatcroft's tour of Hawaii is sponsored by the University of Hawaii College of Continuing Education and Community Service and the State Foundation on Culture and Arts, in cooperation with the Hawaiian Botanical Society, the Garden Clubs of Honolulu, the Hawaii Federation of Garden Clubs, the Hawaii State Library, Kapiolani Rose Garden,the Outdoor Circle, the Pacific Tropical Botanical Garden, and the UH Office of Agriculture Publications and Information. Our rose specialist, Paul Yamanaka, who has been active in arranging this visit, predicts a most entertaining presentation.

Ruth Gay

New faculty members, Botany

I - Dr. Kent Bridges

"Kim" Bridges recently came to the Botany Department at the University to work on the I.B.P. (International Biological Program) on "synthesis effects", using "computer modelling". During the Fall Semester, he will also teach a course in Physiological Ecology with Dr. Douglas Friend. He will also conduct a seminar for graduate students; the title of the seminar is "Quantitative botany for non-mathematical majors."

Dr. Bridges received his M.S. in Zoology at UH and then moved on to U. Cal at Irvine where he received his PhD in biology in 1970; his thesis research involved a quantitation description of leaf shape. From Irvine, Dr. Bridges went to Utah State U where he served as an assistant professor in Wild Life, and assistant director in the Desert Biome, where he was in charge of computer modelling.

Dr. Bridges is accompanied by his wife, Mala, who is Burmese by birth. The two met in Hawaii while Dr. Bridges was a student at UH and Mala was a grantee at the East-West Center, taking part in the library science program. After they married, Mrs. Bridges worked as a secretary for the Friends of Foster Garden. She has been asked to teach Burmese in the University's Indo-Pacific Languages Department. The Bridges came here directly from Utah.

II - Dr. John Porter

Mr. John Porter, hereafter to be known as Dr. Porter, received his PhD degree in September this year at UH. His research, on which his thesis is based, consisted of a study of the growth and phenology of Metrosideros (lehua) in Hawaii.

Dr. Porter is teaching plant anatomy and plant microtechnique this Fall Semester at the University, while Dr. Lamoureux spends his sabbatical year in Indonesia. In the Spring, he will conduct a class in plant morphology.

Besides teaching, Dr. Porter will continue research with IBP on the phenology of woody plants in the Islands. His work will include some trips to the other islands, although most of his research will be done on Oahu.

Bea Krauss

Propagating and planting the creeping naupaka

The creeping naupaka (Scaevola coriacea)was once found on most of our islands inhabiting dry, coastal sand dunes, especially crusty sandstone formations. Over the past 100 years, ranchers, beach home owners, and others have reduced its range to about one square mile on Maui. This last-remaining relict is being endangered by ranching, a golf course and other developments. In 1971, the Hawaii Division of Forestry began propagating it experimentally, testing both seed and vegetative reproduction. Almost 100 percent germination in the greenhouse resulted from seeds sown in sandy soil. Seeds are available almost year 'round with a heavy fruiting period in the summer. Shoot cuttings set in sandy soil and irrigated twice daily grew successfully with about 40 % survival. A mist house might result in a higher percentage of rooting.

At 6 months, seedlings in quart cans grew 8 inches and cuttings 15 inches. Seedlings planted in the field reached 10 inches in length in the same period.

Early in 1972, 75 plants were set out at the Hale Kii Heiau site which is a historical landmark and was within the natural range of naupaka until it was overtaken by koa haole. About half of the seedlings survived. Around 400 more will be planted around the heiau.

Other suitable sites are being sought to plant so that creeping naupaka will have several permanent areas within which to grow within its natural range. We suggest that interested persons on other islands establish small preserves. Seeds or cuttings may be obtained from the Division of Forestry, Wailuku, Maui, 96793.

Wesley H. C. Wong, Jr.

Begin to make ready
Plants, seeds, fruits for
the PLANT DONATION dec. 4

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THE HAWAIIAN BOTANICAL SOCIETY NEWSLETTER is published in February, April, June, October, and December. It is distributed to all Society members for the purpose of informing them about botanical news and progress in Hawaii and the Pacific. News contributions and articles are welcomed.

THE HAWAIIAN BOTANICAL SOCIETY was founded in 1924 to "advance the science of Botany in all its applications, encourage research in Botany in all its phases," and "promote the welfare of its members and to develop the spirit of good fellowship and cooperation among them." Any person interested in the plant life of the Hawaiian Islands is eligible for membership in this Society. Dues; regular, $5.00 per year; family, $7.50; college students, $2.00; students below college level, $1.00.

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